

## **Understanding the Numbers Posted for West Nile Virus Cases**

### **Q. Why do the media, my state health department, and the CDC sometimes report different statistics on the number of human West Nile virus cases?**

**A.** The CDC human case count, as reported in our ArboNET Surveillance System, is based on the number of West Nile virus cases that have been officially reported by each state health department to CDC. Before a state makes its report to CDC, follow-up laboratory testing is often conducted. CDC believes it is important to report the most accurate information possible, so our numbers may be lower than those reported in the media until official case reports are received from the states.

As West Nile virus has become more familiar in the US, many private labs are now able to do early testing on suspected human cases of disease. Physicians often send samples to private labs in order to get quick preliminary results to know if they need to look for another source of illness that may need treatment. Some states and often the media may incorporate these early test results in their total case count.

### **Q. How are human cases of WNV diagnosed?**

**A.** West Nile virus (WNV) infection can be suspected in a person based on clinical symptoms and patient history. Laboratory testing is required for a confirmed diagnosis.

The most commonly used WNV laboratory test measures antibodies that are produced very early in the infected person. These antibodies, called IgM antibodies, can be measured in blood or cerebrospinal fluid (CSF), which is the fluid surrounding the brain and spinal cord. This blood test may not be positive when symptoms first occur; however, the test is positive in most infected people within 8 days of onset of symptoms.

A test for WNV IgM-antibody is used by CDC, state and local public health labs and increasingly at private laboratories. When testing is conducted at private laboratories the health department or CDC will often confirm results in their own laboratories before officially reporting WNV cases.

In some instances, health departments may conduct or request additional testing before officially reporting a case to CDC's ArboNET Surveillance System. The state or the CDC reference laboratory may repeat the initial IgM-antibody testing.

A state may also perform or ask CDC to perform an additional, different test on a specimen. This latter test (plaque reduction neutralization test - PRNT) is usually performed when:

- the state finds its initial case(s) of human WNV illness
- IgM results are not definitive due to equivocal laboratory testing results or insufficient specimens

- the patient might have been exposed to other closely related viruses (like St. Louis encephalitis virus) which may result in a "false" positive laboratory test for WNV

These additional tests require growth of the virus and may take a week or longer (plus shipping time) to conduct. The results from the PRNT are often needed before CDC considers a human WNV infection confirmed.

**Q. How does CDC decide when to report a case of WNV?**

**A.** CDC reports a case of WNV infection once a state officially reports that case to CDC.

The timing of the official report to CDC, relative to onset of symptoms in a person, is variable and depends on when an individual first seeks medical care and the extent of the laboratory testing, as described above, that the state determines is necessary before reporting.

At any given time, in addition to the official case count reported by CDC, there may be additional suspect cases under investigation or in various stages of testing, including supplemental or confirmatory laboratory testing.

**Q. How many of the human WNV cases are being confirmed by the CDC laboratories?**

**A.** When WNV was first found in the United States in 1999, the CDC reference laboratory confirmed all human cases of WNV. Through a comprehensive CDC-sponsored laboratory training program, most states are now able to perform the initial blood tests to identify IgM antibodies in the blood or CSF of suspect human WNV infections, and many state laboratories are also able to perform the more involved PRNT. The CDC reference lab is called upon for confirmatory testing by fewer and fewer states; although the increased activity of WNV still require that many tests be performed at the CDC reference laboratory.